CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 93-002
NPDES PERMIT CA006343

REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

MARINE MAGNESIUM COMPANY
SOUTH SAN FRANCISCO
SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. Marine Magnesium Company, hereinafter the discharger, by application dated February 24, 1992, has applied for reissuance of waste discharge requirements and a permit to discharge waste under the National Pollutant Discharge Elimination System (NPDES).

2. Marine Magnesium Company is a member of the North Bayside System Unit (NBSU), which is the joint powers authority responsible for operation of certain shared transport, treatment, and disposal facilities. The NBSU includes Millbrae, Burlingame, South San Francisco, San Bruno, San Francisco International Airport (both industrial and domestic waste treatment plants), and Marine Magnesium. The treated wastewater is discharged from the NBSU force main and outfall into lower San Francisco Bay, a water of the State and the United States, northeast of Point San Bruno through a submerged diffuser about 5300 feet offshore at a depth of 20 feet below mean lower low water (37 deg 39 min 55 sec N latitude and 122 deg 21 min 41 sec W longitude). Marine Magnesium and the North Bayside System Unit are hereinafter referred to collectively as the discharger.

3. The discharger's wastewater consists solely of industrial waste which results from the manufacturing of magnesium hydroxide and other magnesium precipitation from Bay water. The waste is essentially inorganic and the effluent consists primarily of returned Bay water from their precipitation process. The wastewater also contains magnesium and calcium salts, filtrates, wash water, sealing water from their rotary vacuum filter pumps, flue gas scrub water, filter backwash water, boiler blowdown, Bay water foamate, and laboratory wastes. Sanitary sewage is discharged to the City of South San Francisco's sewer system.

4. The report of waste discharge describes the existing discharge as follows: The average discharge rate is 2.1 million gallons per day (mgd) and the maximum rate is 5.2 mgd. Effluent treatment consists of grit and sand removal and partial pH neutralization. After treatment the effluent is combined with the effluents from the waste treatment plants of the Cities of South San Francisco/San Bruno (SSF/SB), Millbrae, and Burlingame, and the SF International Airport.

5. The Board adopted revised Water Quality Control Plan for the San Francisco Bay Regional (Basin Plan) in December 1991. The Basin Plan contains water quality objectives for San Francisco Bay and contiguous water.

6. The beneficial uses of San Francisco Bay are:

   - o Contact and Non-Contact water recreation
   - o Wildlife habitat
   - o Preservation of rare and endangered species
   - o Estuarine habitat
   - o Fish spawning and migration
   - o Industrial service supply
   - o Shellfishing
   - o Navigation
   - o Commercial and sport fishing

7. Effluent limitations and toxic effluent standards established pursuant to Section 301, 304 and 307 of the Clean Water Act and amendments thereto are applicable to the discharge.

8. Effluent limitation guidelines requiring the application of best available technology economically achievable (BAT) for the Marine Magnesium Company discharge have not been promulgated by the U.S. Environmental Protection Agency. Effluent limitations for this Order are based on the Basin Plan, State plans and policies, current plant performance, and best engineering judgment. The limitations are considered to be those attainable by BAT, in the judgement of the Board.

9. An Operation and Maintenance Manual is maintained by the Discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, facilities, recommended operation strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, the manual shall be kept updated to reflect significant changes in treatment facility equipment and operation practices.

10. Federal Regulations for stormwater discharges were promulgated by the US Environmental Protection Agency on November 16, 1990. The regulations [40 Code of Federal Regulations (CFR) Parts 122, 123 and 124] require specific categories of industrial activities which discharge storm water associated with industrial activity (industrial storm water) to obtain a NPDES permit and to implement Best Technology Economically Available(BAT) and Best Conventional Pollutant Control Technology (BCT)to control pollutants in industrial storm water discharges.

11. This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (California Environmental Quality Act) pursuant to Section 13389 of the California Water Code.

12. The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity for a public hearing and the opportunity to submit their written views and recommendations.

13. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the Discharger shall comply with the following:

A. Discharge Prohibitions

1. The discharge at any point at which the wastewater does not receive an initial dilution of at least 10:1 is prohibited.

2. Bypass or overflow of wastewater to waters of the State either at the treatment facilities or from the collection or transport system or pump stations tributary to the treatment plant or outfall is prohibited.

3. The monthly average dry weather flow of Waste No. 001 shall not exceed 6.2 mgd. The average shall be calculated using only those days during the month when the plant is in operation.

B. Effluent Limitations

1. The waste before discharge into the combined forcemain-outfall shall have a pH of not less than 6.0 nor greater than 9.0. This requirement shall be waived when the combined effluent, as discharged through the combined forcemain-outfall, has a pH of not less than 6.0 nor greater than 9.0.

2. Acute Toxicity

The survival of organisms in undiluted effluent shall be a 11 sample median value of not less than 90 percent survival, and a 90 percentile value of not less than 70 percent survival. The 11 sample median and 90th percentile effluent limitations are defined as follows:

11-sample median: If five or more of the past ten or fewer samples show less than 90 percent survival, then survival of less than 90 percent on the next sample represents a violation of the effluent limit;

90th percentile: If one or more of the past ten or fewer samples show less than 70 percent survival, then survival of less than 70 percent on the next sample represents a violation of the effluent limitation.

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

a. Floating, suspended, or deposited macroscopic particulate matter or foam;

b. Bottom deposits or aquatic growths;

c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

f. Unnatural changes in turbidity or light transmittance where change impairs beneficial use. Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas of 10 JTU or more. Waters of characteristically low natural turbidity (high clarity) shall be maintained so that discharges do not cause visible, aesthetically undesirable contrast with the natural appearance of the water.

g. Substances that will form detrimental deposits and material that can cause or induce formation of combinations or amounts of deposited materials that can be deleterious to beneficial uses of waters and underlying surfaces, with or without resuspension of the water.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a. Dissolved Oxygen 5.0 mg/l, minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation. When natural factors cause lesser concentrations than those specified above, then the discharge shall not cause further reduction in the ambient concentration of dissolved oxygen.

b. Dissolved Sulfide 0.1 mg/l, maximum.

c. pH variation from normal ambient pH by more than 0.5 pH units.

d. Un-ionized Ammonia 0.025 mg/l as N, annual median; 0.16 mg/l as N, maximum.

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

E. Provisions

1. Storm runoff from all processing areas of the plant site shall be collected and routed for discharge through the joint outfall.

2. Requirements prescribed by this order supersede the requirements prescribed by Order No. 87-089. Order No. 87-089 is hereby rescinded.

3. Where concentration limitations in mg/l or ug/l are contained in this Permit, the following Mass Emission Limitations shall also apply:

   (Mass Emission Limit in lbs/day) = (Concentration Limit in mg/l) x (Actual Flow in million gallons per day averaged over the time interval to which the limit applies) x 8.34 (conversion factor).

4. The Discharger shall comply with all sections of this Order immediately upon adoption.

5. Bioassays: Compliance with Effluent Limitation B.6 of this Order shall be evaluated by measuring survival of test fishes exposed to undiluted effluent for the flow-through bioassays.

   Two fish species will be tested concurrently. These shall be the most sensitive species determined from a single concurrent screening of three species: three-spine stickleback, rainbow trout and fathead minnow.

   The Regional Board may consider allowing compliance monitoring with only one (the most sensitive, if known) fish species, if the following condition is met: the discharger can document the acute toxicity limitation, specified above, has not been exceeded during the three previous years, or that acute toxicity has been observed in only one of two fish species.

   All bioassays shall be performed according to protocols approved by the U.S. EPA or State Board, or published by the American Society for Testing and Materials (ASTM) or American Public Health Association.

6. The Discharger shall comply with the attached Self-Monitoring Program. The Board's Executive Officer may make minor amendments to this Self-Monitoring Program pursuant to federal regulations (40 CFR 122.63).

7. The Discharger shall comply with all applicable items of the attached "Standard Provisions and Reporting Requirements" dated December, 1986.

8. The Discharger shall review and update its Operations and Maintenance Manual annually, or in the event of significant facility or process changes, shortly after such changes have occurred. Annual revisions, or letters stating that no changes are needed, shall be submitted to the Regional Board by April 15 of each year.

9. The Discharger shall review and update by December 31, annually, its contingency plan as required by Board Resolution No. 74-10. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or implement a contingency plan will be the basis for considering such a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

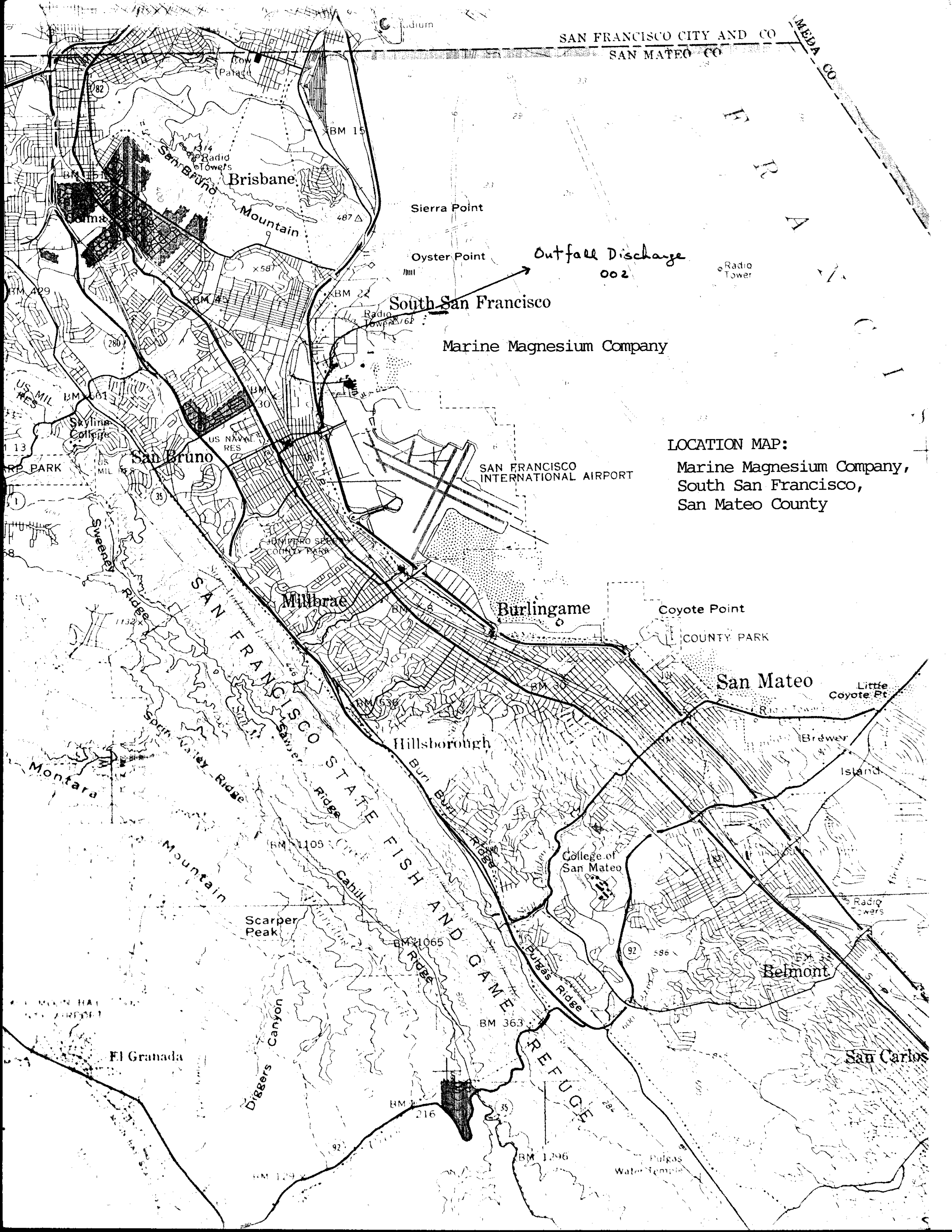
10. This Order expires January 20, 1998. The Discharger must file a Report of Waste Discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

11. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective ten days after the date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objections. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Steven R. Ritchie, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on January 20, 1993.

Attachments:
Location Map
Standard Provisions & Reporting Requirements, December 1986
Self-Monitoring Program

STEVEN R. RITCHIE
Executive Officer


LOCATION MAP:
Marine Magnesium Company,
South San Francisco,
San Mateo County
Outfall Discharge 002
Marine Magnesium Company
SAN FRANCISCO CITY AND CO
SAN MATEO CO
South San Francisco
Brisbane
San Bruno Mountain
Sierra Point
Oyster Point
Radio Tower
SAN FRANCISCO INTERNATIONAL AIRPORT
San Bruno
Skyline College
US NAVAL RES
Millbrae
Burlingame
Coyote Point
COUNTY PARK
San Mateo
Little Coyote Pt
Brewer Island
Hillsborough
College of San Mateo
Belmont
San Carlos
SAN FRANCISCO STATE FISH AND GAME REFUGE
Sweeney Ridge
Montara Mountain
Scarper Peak
Cahill Ridge
Sawyer Ridge
Buri Buri Ridge
Pulgas Ridge
Diggers Canyon
El Granada
Pulgas Water Temple
JUNIPERO SERRA COUNTY PARK

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

MARINE MAGNESIUM COMPANY

SAN MATEO COUNTY

NPDES NO. CA006343

ORDER NO. 93-002

CONSIST OF

PART A

AND

PART B

PART B

MARINE MAGNESIUM COMPANY

I. DESCRIPTION OF SAMPLING STATIONS

A. EFFLUENT

Station	Description
E-001	At any point in the interceptor from the discharger's facilities between the point of connection with the subregional outfall and the point at which all of the discharger's waste tributary to that interceptor is present.
E-002	At any point in the subregional outfall after dechlorination between the point of discharge into San Francisco Bay and the point at which all waste tributary to that combined outfall is present.

B. RECEIVING WATERS

Station	Description
C-1	At a point in San Francisco Bay located over the geometric center of the outfall's discharge ports.
C-2	At a point in San Francisco Bay located midway between C-1 and C-3.
C-3	At a point in San Francisco Bay located in the center of the waste plume.
C-50-SW	At a point in San Francisco Bay, located 50 feet southwesterly, along the outfall line shoreward from Station C-1.
C-50-NW	At a point in San Francisco Bay, located 50 feet northwesterly from Station C-1, normal to the outfall line.
C-50-NE	At a point in San Francisco Bay located 50 feet northeasterly from Station C-1, along the outfall line extended.
C-50-Se	At a point in San Francisco Bay located 50 feet southeasterly from Station C-1 normal to the outfall.

C-300-N through C-300-NW (8 stations)	At a point in San Francisco Bay located on 300 foot radius from the geometric center of the outfall diffuser, at equidistant intervals, with Station C-300-SW located shoreward from Station C-1 at the outfall line.
C-R-NW	At a point in San Francisco Bay located approximately 1500 feet northerly from the point of discharge.

C. LAND OBSERVATIONS

Station	Description
L	Located along the periphery of the eastern fenced perimeter of the facility, downhill and adjacent to the grit and lime sludge holding area, at intervals, not to exceed 100 feet. (A sketch showing the locations of these stations which is acceptable to the Executive Officer will be submitted.)

II. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis shall be that given as Table I.

I, Steven R. Ritchie, Executive Officer do hereby certify the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in the Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No.93-002.

2. Is effective on the date shown below.

3. May be amended by the Executive Officer pursuant to 40 CFR 122.63.

STEVEN R. RITCHIE
Executive Officer

Date: 1/20/93

Attachments:
Table I and Legend for Table

Order No.

TABLE 1

SCHEDULE FOR SAMPING, MEASUREMENTS, AND ANALYSIS (5

SAMPLING STATION	**E-001**		**E-002**		**All C(4)**	**L**
TYPE OF SAMPLE	C-24	G	C-24	G	G	G
Flow Rate(mgd)		Cont.				
Settelable Matter (ml/1-hr. & cu.ft./day)		2/w				
Total Suspensed Solid (mg/l & kg/day)	2/w					
Fish Toxicity 96-hr % Surv'l in undiluted waste	M(1)		M(3)			
Turbidity (Jackson Turbidity Units)					1/m	
pH (unit)		Cont(2)		Cont(2)	1/m	
All Applicable Standard Observation		5/w			1/m	5/w
Dissolved Oxygen (mg/l and % Saturation)			D		1/m	
Temperature (C)			D		1/m	
Apparent Color(color units)					1/m	

LEGEND FOR TABLE

TYPE OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
Cont. = continuous sampling
O = observation

FREQUENCY OF SAMPLING

E = each occurence
D = once each day
W= once each week
M= once each month

2/w = 2 days per week
5/w = 5 days per week
2/m = 2 days per month

FOOTNOTES

(1) Prior to the toxicity test, the discharger may adjust the undiluted waste pH to the average pH of the proceeding 24 hours of the combined effluent as discharged from the subregional outfall. Sampling date should coincide with date of sampling for total suspended matter and settleable matter in E-001.

(2) The discharger shall monitor pH continuously at both E-001 and E-002 and report the results (E-001 compliance need not be reported except for the times of noncompliance at E-002) in the discharger's monthly Self-Monitoring Reports. At his option the discharger may use pH monitored continuously at E-002 to establish compliance with effluent limitations. Continuous monitoring pH equipment shall be calibrated at least weekly and the results reported in the discharger's monthly Self-Monitoring Reports.

Minimum and maximum daily pH values and the time of their occurrence shall be reported, in addition to:

a. The number of events when pH was outside the 6.0 to 9.0 pH range
b. The total (cumulative) hours and minutes that pH was outside the 6.0 to 9.0 range

(3) Sample for bioassay at E-002 to be taken coincident with sample at E-001. Sample pH shall not be adjusted. The discharger may use bioassay results from a sample taken on the appropriate day at E-002 by North Bayside System Unit.

(4) The discharger may use receiving water analyses results from sampling done by the North Bayside System Unit.

(5) Monitoring is not required when the plant is not operating.